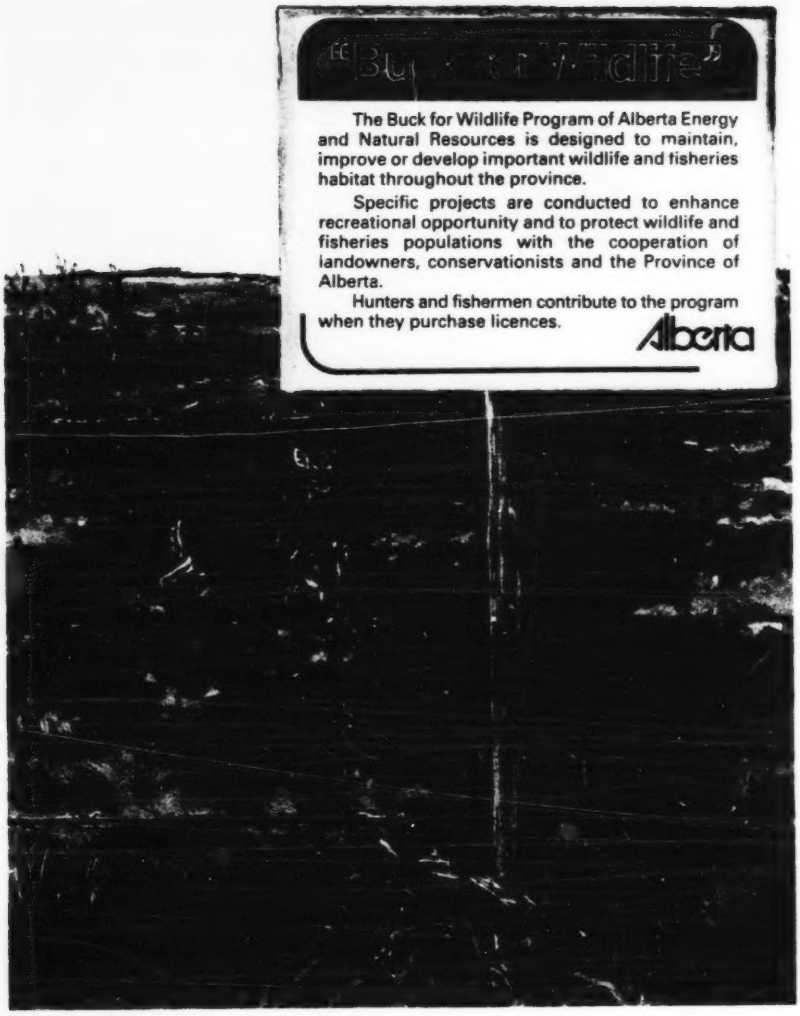
Annual Review
1981

February, 1982


"Buck for Wildlife"
The Buck for Wildlife Program of Alberta Energy and Natural Resources is designed to maintain, improve or develop important wildlife and fisheries habitat throughout the province.
Specific projects are conducted to enhance recreational opportunity and to protect wildlife and fisheries populations with the cooperation of landowners, conservationists and the Province of Alberta.
Hunters and fishermen contribute to the program when they purchase licences.
Alberta

Alberta

ENERGY AND
NATURAL RESOURCES
Fish and Wildlife Division

Appointment Of New Assistant Deputy Minister

On November 2, 1981, Mr. Dennis C. Surrendi became the Assistant Deputy Minister of the Fish and Wildlife Division of Alberta Energy and Natural Resources Department. Mr. Surrendi, a native Albertan, is returning to Alberta after holding the position of Assistant Deputy Minister - Natural Resources with the Government of Manitoba.

Mr. Surrendi obtained a Master of Science degree in Wildlife Ecology from Montana State University in 1969. Since then he has held several senior positions in the area of fish and wildlife management both with the Government of Manitoba and the Government of Canada.

1981
ANNUAL REVIEW
to
ALBERTA FISH AND GAME
ASSOCIATION CONVENTION

February, 1982

Table of Contents

PROGRAM SUPPORT BRANCH

Administrative Services ..... page 3
Extension Services ..... page 8

WILDLIFE MANAGEMENT BRANCH ..... page 12

FISHERIES MANAGEMENT BRANCH ..... page 29

ENFORCEMENT, LIAISON AND STANDARDS BRANCH ..... page 36

HABITAT PROTECTION AND MANAGEMENT BRANCH ..... page 46

SUMMARY OF ACTIVITIES OF THE ADMINISTRATION SERVICES BRANCH 1981

TRAPPING AREA ADMINISTRATION

The 1980/81 trapping year reflects a decrease in the fur production to 12 million dollars as compared to the 15.6 million dollars produced in 1979/80. Lynx were responsible for a considerable portion of the overall production with a value of 3.8 million dollars.

The decrease is due to the drop in the number of beaver, coyote and squirrel pelts sold. The average fur price for these animals also dropped by 1/3.

The Fish and Wildlife Division with the co-operation of the Alberta Trappers Central Association, Indian and Metis Associations, Canadian Petroleum Association and the Independent Petroleum Association of Canada have established a Trappers Compensation Review Board to assist the Alberta trapper in the recovery of damages caused by conventional oil and gas activities to traps, cabins and related equipment.

Modifications have been made to the Resident Trapper's Licence whereby only one Resident Trapper's Licence is required. The resident trapper must have permission to trap from the owner, lessee or occupant for each parcel of land on which he wishes to trap. The permission slips are supplied by the Fish and Wildlife Division.

1981 SPECIAL HUNTING LICENCE AND AUTHORIZATION DRAWS

Once again in 1981 the Fish and Wildlife Division conducted Special Licence and Authorization Draws. The Special Draw was incorporated in the 1960's for the following reasons:

1. To control the harvest of available big game animals to maintain and effectively manage existing big game populations while maximizing the hunting opportunities for Alberta sportsmen.

2. To achieve a fair and equitable distribution of hunting opportunity.

3. To more evenly distribute hunters and minimize landowner/hunter conflict in areas of concern.

One of Fish and Wildlife's objectives this year was to give the successful applicants adequate notice of their success prior to the season opening. The following dates will indicate that this was accomplished:

	Date Licence & Authorizations Mailed	Opening Season Date
Mountain Goat	July 31	Sept. 21
Non Trophy Sheep	July 31	Sept. 7
Male Elk	August 4	Sept. 9
Antlerless Elk	August 14	Sept. 23
Male White-tailed Deer	August 14	Sept. 30
Antlerless Moose	August 18	Sept. 30
Male Moose	August 26	Sept. 30
Antlerless White-tailed Deer	September 1	Sept. 30
Male Mule Deer	September 2	Sept. 30
Cypress Hills Elk	September 2	Oct. 20
Antlerless Mule Deer	September 16	Oct. 28
Trophy Antelope	September 30	Oct. 26
Non-Trophy Antelope	September 30	Oct. 29
Camp Wainwright Deer	October 1	Nov. 26

In order to implement early notification of success the Division made available the Draw Material by June 1 and introduced earlier deadline dates of

July 3 and July 17. However, our efforts were greatly hampered by the Federal Government Mail Strike which began June 29, five days prior to the first deadline of July 3. By that date we had received 55,511 envelopes. Prior to June 29, all applicants were advised to continue mailing their applications, however, on June 30 Fish and Wildlife began accepting hand delivered envelopes. During the earlier days of the mail strike, the Division maintained hope that the strike would be of short duration and that our schedule could be maintained. However, when the strike was still in force on July 20, the Division implemented a contingency plan of allowing persons whose applications were caught up in the mail system to reapply. This applied to all draws except Goat, Non-Trophy Sheep and Male Elk, which could no longer be delayed.

Every effort was made to allow an applicant to enter the Draw System and the deadline date was extended as long as operationally possible. Finally, on August 12 the Division made the decision that we could no longer delay conducting the remaining Draws. By this date we had received 85,954 envelopes.

Two changes were introduced to the Draw Process in 1981 in an attempt by Fish and Wildlife to increase a persons success rate.

The first change was not allowing a successful Antelope applicant in 1979 or 1980 to apply for the Antelope Draws in 1981. This one year extension of the waiting period was introduced to give previously unsuccessful applicants an increased chance of being drawn. The following figures indicate that this was accomplished.

	1980		1981	
	# of Applicants	Success Rate	# of Applicants	Success Rate
Trophy Antelope	5943	28.7%	5473	36.0%
Non-Trophy Antelope	2425	43.4%	2186	65.7%

The second change introduced was limiting the number of authorization applications to four per person. This change showed a moderate success as the average number of authorization applicants dropped to 2.77% in 1981 as was compared to 2.81% per person in 1980. It appears that a further restriction on the number of applications per person would have to be introduced in order for a significant decrease to be effected.

In summation, in 1981 the Division received a total of 86,042 envelopes that contained 107,579 applications representing 34,971 hunters. This reflects an increase of 11.1% when compared to the number of applicants in 1980.

In retrospect, the Division maintains that the 1981 Special Draw was a success despite the encumbrance of the Mail Strike. Planning is already underway for the 1982 Special Draws with hope of introducing further changes to increase the satisfaction of hunters of Alberta and the maintenance of resource management.

1981 SPECIAL HUNTING LICENSES AND AUTHORIZATION DRAWS SUMMARY

Species	Licenses Available		Number of Applicants		Success Rate %	
	1980	1981	1980	1981	1980	1981
Goat	40	42	463	457	9.0	9.8
Non-Trophy Sheep	455	558	1690	1683	27.3	30.9
Cypress Hills Elk	450	450	5153	6049	8.7	7.4
Camp Wainwright Deer	730	770	1418	1519	51.6	50.9
Trophy Antelope	1700	1971	5943	5473	28.7	36.0
Non-Trophy Antelope	1050	1485	2425	2186	43.4	65.7
Sub-Total	4425	5276	17092	17367	28.12	33.45
Anterless Elk	2200	3340	14569	18873	15.1	17.7
Male Elk	1050	2100	2737	2574	38.3	81.6
Anterless Mule Deer	2465	3125	8649	12680	28.6	24.7
Male Mule Deer	875	1175	3272	3016	26.8	38.9
Anterless White-Tailed Deer	11525	4260	18128	12083	61.3	35.2
Male White-Tailed Deer	380	350	1417	520	26.8	67.6
Anterless Moose	2205	2285	17884	23879	12.3	9.5
Male Moose	4205	4260	10570	13331	39.8	31.9
Sub-Total	24905	20895	77226	86956	31.13	38.39
TOTAL	29330	26171	94318	104323	29.63	35.92

SUMMARY OF ACTIVITIES OF THE EXTENSION SERVICES SECTION 1981

TRAPPER EDUCATION

The education courses again were popular with the province's 2988 registered trappers in which 18, one week workshops were held with 318 trappers attending. A comprehensive four week course, conducted in cooperation with Alberta Vocational Centre at Lac La Biche, attracted 10 participants.

Special attention was given to Alberta trappers developing new humane trapping devices. A series of tests have been conducted with these new devices in conjunction with the Federal Provincial Committee for Humane Trapping.

Considerable attention was devoted to the newly established Trapper Compensation Review Plan. To date, the six member panel representing Petroleum interests, trappers including Metis and Indians plus a chairman from the public, have concluded 18 claims and provided the Minister with recommendations on various claims. So far the Compensation Fund has paid out over $5500.00 to aggrieved trappers. Petroleum companies have paid out in excess $2500.00. The majority of the claims involved payment for loss of traps, some fur, damage to snowmobiles, and labor to move established sets, etc.

Considerable time has been devoted to explaining the function of the compensation program to trappers and petroleum personnel.

A new, 15 minute audio visual presentation, complete with 16 mm copy, was completed to promote and tell the story of the Wild Fur Industry in Alberta.

CONSERVATION HUNTER EDUCATION PROGRAM

Publication of the long awaited Conservation Hunter Education manual provided the start of a major recertification campaign for this program. A total of 60 recertification workshops were held to bring 928 instructors in step with the revised program.

The first National Rifle Association (NRA) - North American Association of Hunter Safety Co-ordinator (NAAHSC) professional staff development academy was held at the Narrow Lake Camp. Of the participants one observer was from the Alberta Fish and Game Association.

A major shooting instruction session was conducted at the Canadian Scout Jamboree for 4000 of the 16,000 scouts involved in this camp. This event was held in the Bow Valley Provincial Park and is a prelude to the World Scout Jamboree in 1983.

Assistance for shooting skills instruction and the loan of equipment was provided at the Goldeye Centre Conservation Camp sponsored by the Alberta Fish and Game Association.

In 1981, 10,398 students took the Alberta Hunter Education course. Of these, 4,320 participated in the practical or camp programs. A vote of thanks goes out to the many Fish and Game members who have helped with Hunter Education this past year.

RESOURCE EDUCATION

The updating and revision of wildlife brochures continued with three new productions completed in 1981/82. Special brochures on bears and topics related to Kananaskis Country were begun and will be published for the coming summer season.

The popularity of Wildlife Week was again in large part due to the support and instigation of special visits to schools by members of the Alberta Fish and Game Association. This close harmony with the Division and with schools throughout the province is a direct way to deliver Wildlife Week messages and materials to students and the public. For the second year running, Alberta children have received top honors in the wildlife poster contest. Again, this fine showing is directly attributable to the help from Fish and Game members.

Throughout the year a steady demand was placed on the Wildlife Resource Supervisor to deliver talks and prepare materials for Divisional programs, e.g. Brooks Wildlife Centre, Sam Livingstone Fish Hatchery and Kananaskis Country.

KANANASKIS COUNTRY

In Kananaskis Country outdoor recreational opportunities are available in an hours drive west of Calgary. Current use is over half a million visitor days per year, and projected to increase to about one million by the year 2001. Because Kananaskis Country covers about 5,200 sq. km, the recreational opportunities available, and those regulations which might affect their use, are very important.

In order to inform visitors and to provide them services, a coordinated plan by the Alberta Forest Service, Alberta Parks and the Fish and Wildlife Division involves interpretation, information/orientation and environmental education. These include topics such as the history of resource use (hunting, fishing, mining, exploration, ect.) which are covered in a variety of media including self-guiding trails, brochures, pamphlets and signs.

Exhibits constructed in 1981 at information centres oriented visitors to the facilities available for their use. Public service programs (guided walks, campfire programs) provided help to interested parties. Many school children

were given the opportunity to learn about the natural environment and their impact on it by means of an education program now being expanded.

For more information on the Kananaskis programs of the Fish and Wildlife Division, please contact Christene Almon, Interpretive Specialist in Calgary, 261-6565.

RESEARCH SUPPORT

In 1981 the new position of Research Officer was added to Extension Services. This position stems from the need for research into the condition and value of Alberta's fish and wildlife resources, particularly when these values are weighed in light of continuing industrialization of the province.

This position is the primary contact for national surveys on the value and importance of wildlife. Within the Division special attention is devoted to annual operation of the draws for authorizations and special licences.

Assistance was provided to Divisional biologists and officers on survey and research projects involving sophisticated statistical designs and relating the results in practical terms for dissemination to the public.

MANDATORY TESTING OF HUNTERS

A program of testing upwards of 400 hunters who lost their licences in 1981 was established and placed into operation. A rigid structure of testing hunters using 4 different exams, incorporating a practical portion, has proven satisfactory.

SUMMARY OF ACTIVITIES OF THE WILDLIFE MANAGEMENT BRANCH 1981

STRUCTURE AND FUNCTIONS OF THE WILDLIFE BRANCH

The overall objective of the Wildlife Branch is to protect the wildlife resource from excessive industrial and recreational exploitation while providing ample opportunity for public enjoyment of that resource. The Branch researches, develops and evaluates policies, regulations and management plans, and the Regional offices implement these in the field.

Animal populations are monitored and managed through the efforts of three complimentary sections in this branch: Wildlife Research, Wildlife Management, and Wildlife Culture.

The Research Section conducts in-house research and coordinates much interagency research on a variety of subjects aimed at better management of the wildlife resource. Some of the research subjects currently under investigation include: the responses of Camp Wainwright deer and grouse populations to harvesting; reintroduction techniques for peregrine falcons; wildlife productivity and game ranching feasibility; effects of hunting restrictions on bighorn sheep populations; environmental and physiological causes of bighorn sheep die-offs; effects of prescribed burning as a tool for range improvement for bighorns; moose biology and management.

The Wildlife Management Section carries out a number of programs including: the development of species management plans; the development and assessment of hunting seasons; the designing and implementing of big game and waterfowl surveys; research on the biology of problem wildlife species and techniques of problem wildlife management; testing of prospective humane traps; monitoring of fur harvests; studies of waterfowl problems and biology; conducting the waterfowl crop damage control program.

The Wildlife Culture Section operates from the Brooks Wildlife Centre. The Centre propagates large numbers of pheasants and small numbers of Canada geese for release; produces quail for cooperative raptor breeding programs; conducts research on pheasants, captive-breeding waterfowl, wild waterfowl and raptors; rehabilitates injured wildlife, especially raptors and endangered species; and provides interpretive displays and extension services for the public.

BIG GAME

ANTELOPE

Alberta's antelope population continues to expand and has reached the level it was at prior to the die-off of 1977-78. The annual summer surveys conducted in July 20-28 revealed that the estimated antelope population had gone from 18,600 in 1980 to 20,700 in 1981. Increases within the hunting zones went from 15,500 to 18,500. Buck-to-doe ratios indicate that the number of mature bucks continues to increase. Harvest permits for 1981 were 1346 for non-trophy and 1909 for trophy animals, for a total of 3355, up from 2450 in 1980.

Hunter success for 1980 was reported at 782 (84% participant success) trophy and 419 (85% participant success) non-trophy animals for an estimated harvest based on individual overall success rates of 1256 trophy and 691 non-trophy antelope. The 1981 harvest (as recorded to the end of January 1982) was 725 trophy and 320 non-trophy animals. Final harvest figures for 1981 are not yet available. Barring unforeseen problems, antelope numbers should remain high, which in turn means that the recreational opportunities will also remain high.

MOOSE

Mild winters and access by hunters have been major factors affecting moose populations.

In the St. Paul vicinity in agricultural fringe areas (aspen parkland), moose numbers in 1981-82 seem to be down slightly but still strong after expanding rapidly in recent years. Densities of 1.5/sq. mi. are recorded.

Near Lac La Biche, densities are about 1/sq. mi. and moose are still appearing in new areas. The rapidly increasing populations have peaked, however.

In the Fort McMurray area the previously rather stable moose numbers are in a general decline due to heavy hunting resulting from new access.

The 1981 moose harvest was very heavy in the Peace River area, partly due to new roads. This population is generally strong and shows a general increase.

The Saddle Hills population is down slightly but is still a strong population. A management scheme including a liberal female season was designed to bring this population down slightly and is working.

In the Edson area, despite heavy hunting pressures the harvest was average or down slightly due to a dry year and lack of snow. The population is generally high, with 2+ moose /sq. mi.

At Rocky Mountain House and the adjacent foothills the 1981 moose harvest was down slightly due to poor hunting conditions. January 1982 aerial surveys showed a strong population which had good reproduction last year.

The area west of Calgary contains a dense population which had good reproduction, and from which hunters enjoyed very good hunting success in 1981. In the Kananaskis area the harvest was down because of restrictions on access. Moose are generally very abundant here.

Moose are very abundant in the Porcupine Hills and the hunting success on cows was very high in 1981. Bulls were not as frequently taken but are relatively numerous.

Ticks continue to be a problem for moose in parts of central Alberta, mainly in the aspen parklands and deciduous woods areas of west-central Alberta. Some mortality of moose in late winter and early spring can be expected from this factor. High moose densities, late freeze-up, and mild winters contribute to this problem.

The mild winters in recent years have generally enhanced moose populations throughout Alberta. This winter could be different, however, althought an early spring will help moose to survive and be in good condition even if the winter is relatively harsh.

BIGHORN SHEEP

In Alberta there are approximately 5,000 bighorn on Provincial land and another 400 in our National Parks. Prior to 1956, hunting seasons were held for rams only, with no horn size limit. In 1956 the trophy or 3/4 curl regulation was introduced. It was noted that rams in the Chinook belt south of the Bow River grow significantly larger horns than rams in the north. Following a major die-off of bighorns from pneumonia in British Columbia, Alberta introduced a non-trophy season in 1966 in order to regulate population numbers. In 1968 the trophy horn size was increased to 4/5 curl. In 1971 compulsory registration for rams was introduced. During the past five years the annual trophy harvest has been 180 rams (20% by non-residents) and 130 non-trophy sheep, i.e. approximately 6% of the Provincial population.

In 1971 a study of the impact of hunting on non-trophy sheep was begun on Ram Mountain. The study herd was isolated and was comprised of approximately 100

animals, of which about 95% are marked. There continues to be the annual harvest of 2 or 3 legal rams from Ram Mountain by resident hunters. At the beginning of the study, ewes were removed at the annual rate of 5 or 6. In recent years 10 or 11 ewes have been removed, i.e. the harvest rate has jumped from about 8% to 13% of the population. Results to date indicate that there is no difference in survival between orphans and non-orphans. There has been a remarkable increase in the reproductive rate of the herd in response to the increased exploitation. Yearlings become breeders when the adult ewe population is reduced below 28 animals. Yearlings do not appear to breed when the herd exceeds 27 animals. The response appears to be behavioral since the yearlings are breeding within three months of the removal of the ewes in the fall. Although small yearlings have small lambs and these lambs do not survive as well as others, the herd is not decreasing under the present harvest system.

We have not been able to demonstrate any correlation between lamb crops and winter weather, spring temperatures, or precipitation. However, we have found a very high correlation between fecal nitrogen (i.e. crude protein intake) of adults at the end of May and lamb production. In other words, there is a high correlation with the timing of spring green-up, availability of high plant protein, and lamb survival.

A minor die-off from pneumonia of 10% of the bighorns occurred on the Sheep River Sanctuary in southern Alberta in 1978. Coughing bighorn were first observed in early September and the die-off occurred in the first week in October. Lungworm levels in the survivors where relatively low, averaging 300 larvae/gram of dry feces in late winter 1979. Following the wet summer it appeared that in early fall the few animals had ingested a heavy infection of larvae that matured in synchrony in sufficient numbers to precipitate the death of their hosts by pneumonia. The Sanctuary (since 1973) may be creating a death trap from secondary lungworm infection, since the herd is returning

early, and concentrating for longer periods at the winter range as a result of avoiding hunters and/or hikers.

The 1981 harvest was 232 sheep (81% by residents). North of the Bow River 150 sheep were taken (71% by residents), and south of the Bow 82 were shot.

MULE AND WHITE-TAILED DEER

Mule and white-tailed deer populations remain at high densities throughout most of their range. Incisor bar envelopes and questionnaire results to date show, as in the past three years, that the hunters experienced good success during the 1981 season. Surveys have confirmed what was suspected, that the production of fawns last spring was high. This 1981-82 winter season began as the past few have, but January 1982 has brought with it cold weather and deep snow over most of the deer winter ranges. If these conditions continue for the rest of the winter period the fawn crop will show a decrease along with a decrease in the number of surviving yearlings.

The female white-tailed deer authorization system was dropped in some parts of Alberta in 1981 in favor of a two week open season, while in other areas the authorization program remained in place. As was the case in 1980, all hunting in Kananaskis Country was conducted under the authorization system.

ELK

The Province's elk populations continue to expand. Elk depredation problems have been reported from Manning, Spirit River, and Flatbush south to Pincher Creek. In the Eastern Slopes areas, generally away from agriculture, elk depredation problems have been few, however. Some management planning has been undertaken to control depredations especially in the southern areas.

Programs to assist with the fencing of haystacks have resulted in reduced depredation in many areas. Tests are being conducted with electronic stack protectors and with bloodmeal as deterrents.

In January and February of 1981, thirty-two elk were taken from Elk Island Park and released near Amadou Lake. The grossly imbalanced sex ratio (29 males, 3 females) resulted from poor trapping conditions and prior commitments for elk. Some of the marked animals dispersed more than 70 miles. In the fall of 1981 an elk trap was built at Bob's Creek in southern Alberta, to be used for removing elk from the local population and making them available in 1982 for transplants elsewhere into suitable habitat which is well removed from agricultural areas.

Because of a strong elk population in the southwest of the Province, and crop depredation problems, three 5-day extensions were added to the 1981 season for female elk authorizations in much of Big Game Zone 11. The effects of this are not known as yet. As of January 28, 1982, 1100 elk kills had been recorded (others are in hand, yet to be recorded). From the 800 elk kills which have been analyzed, 583 were males and 217 females. On the 450 permits issued for the Cypress Hills elk hunt, 130 elk were taken.

MOUNTAIN GOATS

Goat populations in Alberta continue to increase with the provincial population now nearing the 2000 mark. Broken down, the subpopulations are roughly: 1000-1200 north of Highway 16, 200-250 along the East Slopes from Highway 16 to Highway 1, 300-350 in the Calgary area, and 150-200 south of Highway 3. All areas surveyed indicated that production was up and that the yearling cohort was also up. In fact, the yearling count from the Willmore Wilderness Area was one of the highest obtained in the last 9 years. Goat populations in Southern Alberta are to be inventoried this coming year and

from all reports the areas occupied by goats are increasing; there have been goat sightings reported from areas where they have not been recorded since 1967.

As reported previously, the high rate of natural mortality among kids appears to be the major factor controlling the rate at which a population expands.

The goat harvest, from those areas open to hunting, totalled 30 at the time this report was compiled.

CARIBOU

Caribou numbers and distributions remained low throughout the province with those groups in the Foothills and Willmore Wilderness Park experiencing the most serious problems. In all areas, habitat alienation, reduction of herd size, range discontinuity, low reproductive potentials and loss of herd traditions are the most serious problems. Increased access, through logging activity, recreation, and petroleum exploration threaten existing bands of caribou. Due to declines in caribou numbers and distribution throughout the province, a caribou study was initiated in 1979 in the Willmore Wilderness and foothills area. Data on population size and structure, seasonal movements and habitat use, food habits, mortality factors and land-use conflicts have been computed for two years and preliminary analyses completed. Over two winters 21 caribou have been radio collared. Ten of the collars are still functioning. The majority of the caribou located in the study area are mountain caribou that wintered in the forested foothills and moved in spring to their alpine summer range; some animals moved well into British Columbia.

The caribou used mature lodgepole pine forests, spruce/lodgepole pine forests and open meadows as their main winter habitat, and lichens dominated the winter diet. Favoured summer habitat was productive, herbaceous alpine meadows near persistent snowbeds.

Calf production appeared good in the spring of 1981 but fall surveys showed only 13% of the population to be calves.

Wolf predation on the winter range was not evident, however, two of the radio-collared caribou were killed on their summer range in the mountains. Parasites in fecal samples were rare.

With the closing of caribou hunting in 1981, the proposed logging in the study area is now the potentially single greatest conflict facing this caribou population. However, the study will continue to examine all potential limiting factors. Upon completion of studies in the Willmore area, populations in the Peace River and St. Paul regions will be similarly studied.

FUR RESOURCES

SNOWSHOE HARES AND LYNX

Snowshoe hares have peaked in central and southern Alberta and seem to now be declining. Western populations are still approaching peak levels. Lynx harvests were up by nearly 10% in the 1980-81 season from the 1979-80 season. This year's harvest is expected to rise again, but next year a decline can be expected. Heavy snow and lower temperatures may affect this year's season by increasing the average pelt value but decreasing the number of animals harvested due to inaccessibility of areas and lack of movement of animals.

COYOTES

Coyotes have continued to remain a high priority species. In the northern part of the province the 1981 coyote season was extended to December 31 from November 1 and in the southern part of the province the season was opened for the month of November. Some further expansion of the coyote hunting season

can be expected for 1982. It is prohibited to hunt coyotes from snowmobiles. New survey techniques are being tested to compare with existing techniques for monitoring population trends of coyotes, and allowing for meaningful management.

OTTERS

Still of high priority are the otter studies, both laboratory and field. Age/sex classification of carcasses received from trappers as well as reproduction and diet are being analysed in the lab. The field study hopes to give home range and interrelationships between individual otters and otter families and eventually produce a population model with limiting factors expressed. Pollution problems in Alberta's water systems may be indicated by monitoring the otter.

SURVEYS AND TESTING

Survey techniques and preparation for the testing of humane trapping techniques occupied a great deal of time and effort during the latter half of 1981. Field testing of humane traps will continue to be high priority in 1982 and probably for a few years, at least in Alberta. About 10 designs of traps are being or are to be tested in Alberta in conjunction with the Western Fur Managers' Conference. Hopefully, this testing will be expanded in the fall of 1982.

UPLAND BIRDS

PHEASANTS

The pheasant population in southern Alberta increased slightly after yet another mild winter. Spring crowing counts were higher in almost all routes

in 1981 than 1980. Brood surveys carried out in the Brooks district indicated that broods hatching in early June were not adversely affected by heavy rains. In areas of good cover, such as in the Brooks district, the hatching success led to a large fall population.

In 1981 the Brooks Wildlife Centre produced 91,386 chicks for release, of which 47,700 chicks (52%) were given to raisers, such as 4-H'ers, Fish and Game clubs, Upland Birds of Alberta, and private raisers. Of these, 36 Fish and Game clubs raised 13,725 chicks. The Fish and Wildlife Division provided grants of ten thousand dollars to Fish and Game Association clubs and Uplands Birds of Alberta for construction of pens for rearing and releasing pheasants. In summer and autumn, the Wildlife Centre personnel raised and released 43,686 (48%) pheasants into good habitat in southern and central Alberta for hunting, to bolster or establish local pheasant populations or as incentives to retain or develop wildlife cover by landowners. Similar numbers are anticipated for release in 1982, and, if an anticipated new hatchery is constructed, the Centre's personnel will be able to release 100,000 pheasants each fall beginning in 1983 or 1984.

SAGE GROUSE

In the southeast corner of the province resides a healthy sage grouse population. In 1980 the counts of grouse on strutting grounds showed a dramatic increase over the numbers from 1975-79. In 1981 the numbers increased again but less markedly. The cause(s) of the population increase are as yet uncertain; favorable winter and spring conditions in the last few years probably contributed.

HUNGARIAN PARTRIDGE

Huns are relatively stable in their numbers on the prairies but follow a 10 year cycle of abundance in the parklands area. In this northern part of their

range they appear to have reached a peak in 1981 and can be expected to now decline for a time. Shortage of winter food, and predation pressure, seem to be much more important population limiting (destabilizing) factors in the aspen parkland.

SHARPTAILED GROUSE

In the northern parkland and boreal forest, sharptail populations undergo considerable fluctuations during a 10 year cycle with occasional boom periods when they take advantage of newly opened up habitat, e.g. pastures. In contrast, on the prairies their populations tend to be more stable, with local declines as a result of habitat loss due to agriculture.

In the St. Paul, Lac La Biche, Cold Lake area, from counts on dancing grounds, sharptails have shown an increase during the last 2-3 years. In east-central Alberta the populations appear to be fairly high. In 1981 a project was begun at the Lethbridge office to collect historical records of sharptail dancing grounds, to recheck these to see if they still exist, and to carry out long-term monitoring by means of annual counts of sharptails at a number of dancing grounds in two areas with quite different habitat.

RUFFED GROUSE

In general, ruffed grouse populations are declining towards the low phase in their ten year cycle. In the Fort McMurray, Calling Lake, Lloydminster area this species has been at reduced numbers for 2-3 years and might be expected to remain at low densities for 3-4 more years before building back up again. Interestingly, the ruffed grouse crash occurred prior to, rather than following, the snowshoe hare crash which has just begun.

WATERFOWL

Following another spring of below normal runoff, May pond numbers, habitat conditions, and number of breeding ducks in 1981 were again well below the long-term average. Spring rains, which came too late to be of noticeable value to waterfowl seeking suitable nesting areas, did contribute somewhat to brood survival by maintaining water-levels on the more permanent wetlands.

The 1981 fall flight, while much below that enjoyed during 1969-76, was comparable to the four preceding drought-reduced seasons. Hunting conditions varied throughout the province during the fall, which extended well into a mild November in most parts of the province. Overall, hunting opportunity and harvest were little different from 1979-80 seasons. The 1981 season marked the end of the third year of the Prairie Harvest Management Program, an agreement which will allow fixed or stabilized duck regulations over a five year period.

Alberta's breeding population of large Canada geese was also affected by dry spring conditions, especially in the south where some nesting islands were high and dry or separated from the mainland by only shallow water. Breeding pair surveys indicate that the population growth experienced in recent years is now stabilized due in large part to saturation of the available breeding habitat. Gosling surveys on major nesting lakes and the southern rivers showed production to be slightly higher than in 1980 but about equal to recent years. Northern production of Arctic - nesting snow, white-fronted and lesser Canada geese was average to slightly above, with southward migration a little earlier than normal in most parts of the province. Very dry fall conditions in the major east-central staging area again resulted in a filtering through rather than any build up or major concentrations.

Over 1800 resident Canada geese in southern Alberta were drive-trapped and banded. In addition, over 800 goslings with adults were banded during the

transplant program and many were moved onto several habitat improvement projects in the central part of the province. In the Grande Prairie area, where a smaller project was initiated in 1978, nearly 200 local Canada's were banded during the summer. In the southeastern part of the province, 134 goslings in the company of 12 adult females were released on selected wetlands as part of a cooperative venture with the state of New Mexico.

From mid-September to mid-October the waterfowl hunting season was marred by reports of contaminated waterfowl in Montana. This resulted from endrin sprayed against cutworms in Montana winter wheat in the spring. There was a real concern that waterfowl in Alberta could also have been effected. Well over 1000 telephone inquiries from worried hunters and others were received in Division offices. An early news release from the Division indicated that theoretically (from banding data, and biocides information) there was little reason for concern here. When more than 70 waterfowl from central and southern parts of the province were analyzed and no trace of endrin could be found, and further banding data indicated a very, very low chance of any contaminated waterfowl being in Alberta, an "all clear" news release was issued.

A final draft of a management plan for the Rocky Mountain population of large Canada geese (whose nesting range extends into south-central and central Alberta) has been developed in cooperation with members of the Pacific Flyway. Also nearing completion for the Pacific Flyway are management plans for trumpeter swans, Ross geese and snow geese. Preliminary drafts of cooperative management plans for Hi-line and Short Grass Prairie Canada geese and western white-fronted geese have now been completed for those Central Flyway populations.

A final draft of the National Waterfowl Management Plan for Canada, developed cooperatively by the Canadian Wildlife Service and the ten provinces, was

formally released to the public for comment. A provincial plan for Alberta waterfowl populations will receive preliminary review in early 1982.

NON-GAME BIRDS

PEREGRINE FALCONS

The peregrine falcon recovery program in Alberta achieved new milestones in 1981 with the Alberta Fish and Wildlife Division and the Canadian Wildlife Service jointly conducting the program. The efforts of the program are concentrated to achieve maximum production of captive young in order to provide for release programs and the supplementing of wild nest production. Ninety-nine young were bred and raised at the C.W.S. Wainwright Raptor Facility and an additional ten were raised at the Black Diamond facility. Five were taken from wild nests to add to the captive breeding stock. Fourteen young were retained for breeding stock. The remaining one hundred birds were distributed to release sites throughout Canada. Forty-four young were released in Alberta; fifteen were fostered to wild nests in northern Alberta, three were fostered to a pair of falcons in Edmonton, eight were released from the O.S. Longman Building in Edmonton, six were released from a historical nest site along the Red Deer River and twelve were released from a cliff site in Kananaskis Country. The remaining young were distributed to release sites in Yukon, Saskatchewan, Manitoba, Ontario and Quebec. Results of the 1980 releases were very promising: two yearling males were observed this year in Kananaskis Country, and four yearlings returned to Edmonton this year. Two yearling (subadult) females in Edmonton subsequently paired with adult males at the AGT Toll Building and the O.S. Longman Building. Three young peregrines were fostered to the new pair at the AGT Building. This was the first recorded fostering of young to an unproductive (courting but non-laying) pair of falcons. In 1982 we may see the first successful nesting in Alberta by a pair of captive bred and released falcons.

The Alberta Fish and Wildlife Division continued support of the Alberta Peregrine Foundation facility operated by J. Campbell at Black Diamond. Research on artificial incubation of merlin and peregrine falcon eggs has been conducted at this facility.

FALCONRY

Regulations permitting the sport of falconry in Alberta were established in November, 1981. Strict regulations and a permit system will control the possession of certain birds of prey for training, hunting of legal quarry, and propagation. Wild birds of prey may not be taken for the sport; falconry birds may be imported, or captive-bred, or injured birds may be obtained from a rehabilitation facility. The Alberta Falconry Association will assist with ensuring high standards in ethics and care of the birds. Because of the large effort involved in training falconry birds, the number of practioners will always be few. Impact on prey species will be negligible. The wild birds of prey probable will benefit considerably from the work of the falconers.

SWANS

A Division-funded study of the feeding and nesting requirements of Trumpeter Swans in the Grande Prairie area was completed by a University of Calgary M.Sc. student in 1981.

PROBLEM WILDLIFE TECHNICAL SERVICES

In 1981 bats and skunks were monitored for rabies and other diseases in a project cooperating with many other agencies. In an area with skunk rabies, movements of skunks were radio-tracked in order to study their dispersion. Investigations have continued on wolf-livestock problems, including the determination of characteristics of wolves which do kill livestock and an

assessment of the efficiency of non-poison control measures. Bear-man conflicts especially at bee-yards and industrial and forestry camps have been investigated and solutions sought; an information brochure concerning the prevention of bear-industry conflicts is in preparation. Depredations by ungulates are under study in order to determine the extent of the damage and to evaluate possible management systems to decrease the damage. A color slide and script kit on beaver ecology and management was prepared and is available for educational uses, and a number of technical reports and publications were prepared.

SUMMARY OF ACTIVITIES OF THE FISHERIES MANAGEMENT BRANCH 1981

REGIONAL FISHERIES SERVICES

The regional fisheries services continued in 1981 to maintain a number of functions and programs, including recommending fish stocking programs, monitoring commercial fisheries, recommending changes to sport and commercial fish regulations, carrying out fish resource surveys and contributing to the integrated resource managment planning activities.

The fish stocking program for 1981 involved the stocking of 218 waterbodies with a total of 4.9 million fish. This is a slight increase over 1980, when 4.8 million fish were stocked into 211 waterbodies. Five streams in the Nordegg area were stocked with cutthroat trout in an attempt to provide expanded stream fishing opportunities. The streams are Sunkay, Chungo, Blackstone, Wapiabi, and Bighorn. The plan is to introduce cutthroat trout to these waters for several consecutive years to develop self-reproducing populations of this species. The experimental introduction of small mouth bass to Island Lake was continued in 1981 with 9,600 fry planted.

The monitoring of the commercial fishery is an ongoing process requiring the weighing, measuring and aging of fish in order to determine the effect of the fishery on the fish population. In the fiscal year of 1979-80, the commercial fishery took 2.01 million kilograms of fish from 83 lakes with a marketed value of 2.8 million dollars. In the fiscal year 1980-81, the fishery took 2.48 million kilograms of fish from 96 lakes with a marketed value of 3.3 million dollars.

The important changes to the sport fishing regulations for 1981 were: the possession of fish for bait was prohibited on Trophy Lakes and waters where trout exist. Several lakes were declared High Mountain Lakes and because of

their low productivity, daily and possession limits for fish were considerably reduced. Annual closures to angling have been put on Brown Creek, Chungo Creek, Bighorn Creek and the Blackstone River. A spring closure on the Wapiabi River and a fall closure on Policeman Creek were imposed to protect spawning fish. To protect spawning bull trout permanent closures were put on all tributaries to the Clearwater River upstream and including Timber Creek and Pinto Creek, a tributary to the North Burnt Timber Creek. Seibert Lake is closed to angling from April 1 to May 31 to protect spawning walleye. A closure on angling during April 1 to May 31 has been put on the Muskeg and Steepbank Rivers to protect Arctic Grayling. A new closure to angling on Mink Creek, tributary to Buck Lake, was imposed from April 1 to May 15 to protect pike spawners.

There were very few changes made to the commercial fisheries regulations other than minor changes in timing and some quota changes. Zoning of some of the lakes in southern Alberta to non-commercial fishing areas was implemented to protect spawning walleye and to reduce the catch of walleye and pike.

The walleye enhancement program, which has been identified as a significant new area of involvement, has been primarily in the planning phase. Identification of possible sources of spawn and locating a site for a facility to hatch and rear walleye, as well as assessing walleye programs elsewhere, have been the main activities.

In the Southern Region, the emphasis is still toward fish resource and habitat inventory, with 20 surveys being done on both east slope watersheds as well as prairie potholes and small reservoirs. These surveys are necessary to assess fish producing capabilities and are the basis for recommendations for fish stocking, regulation changes, and possible habitat improvement. Beauvais Lake was treated with chemicals in 1980 to remove suckers and was re-stocked in 1981 with 133,000 rainbow trout fingerlings.

Work on the Bow River included spring and fall trout spawning surveys, fish population estimates and the determination of fish age and growth. In addition, work was done on the biology of the river at a number of sites downstream of Calgary. A program of developing public access to the river is presently underway. This effort is part of a new Public Access Development program to provide access sites to fisheries and to maintain sanitary facilities at the sites.

In the Red Deer area, surveys are continuing in the area east of Highway No. 2, to locate suitable sites for stocking. A total of 35 surveys were done in 1981. There are few native fish in the area, and many small regularly stocked "potholes" provide the only good sport fishing. Open Creek Reservoir near Rimbey was chemically treated to reduce sucker populations.

The Edmonton Regional staff continued studies on the walleye at Fawcett Lake. This project is providing some badly needed basic information about walleye, their spawning, growth and mortality as well as the effect of the sportfishing on them.

The major effort in the Edson area has been directed at stream surveys, particularly since the Forest Management Licence was issued in the Berland area. These surveys are designed to provide a knowledge of the fish resources and habitat to assist in the planning of the forestry roads and forest cutting areas. Such planning is necessary to minimize the detrimental effects to the fish and habitat.

The staff in the St. Paul Region have been primarily concerned with monitoring the commercial fishery and with the surveying of ten small lakes to assess their ability to produce fish. This region has one of the largest elements of the commercial fishery and considerable effort is put into monitoring and managing this fishery. Surveys have been carried out on walleye spawning and walleye exploitation.

In the Peace River Region, the emphasis has been on commercial fisheries management and monitoring, and on dealing with specific problem areas to develop and maintain sports fishing opportunities. Commercial fish monitoring and lake and stream survey work is continuing for development of trout fisheries.

FISHERIES RESEARCH

Spring spawning migrations of walleye into Buffalo Bay (Lesser Slave Lake) were intercepted, tagged and released. Walleye tagged in previous years and recaptured were tabulated. The number and location of recapture of marked walleye in commercial nets set in Lesser Slave Lake was documented throughout the year.

In the spring of 1981, 9.3 million walleye eggs were stripped and fertilized from a portion of the 1,437 walleye captured in the Sand River, Winefred Lake and transported to the Sam Livingston Fish Hatchery in Calgary for incubation and hatching. Winefred Lake walleye do not appear to home in large numbers to the Sand River to spawn. Forty-six female and 680 male walleye were tagged in the Sand River in the spring of 1979. Nine tagged walleye were recaptured in traps and five walleye were recaptured by anglers in the Sand River the same year of tagging. Three walleye, tagged in 1979, were recaptured in the 1980 sets of river traps and one was recaptured by an angler that year. In 1981, only two marked walleye were recaptured in the traps and none were reported captured by anglers.

Laboratory experiments on the incubation and hatching of walleye eggs revealed that egg incubating water temperature was critical to recruitment to walleye populations in Alberta. Eggs incubated continually at 12^{o}C produced normal young-of-the-year walleye at hatching. In Alberta, when walleye eggs are incubated in both streams and lakes and when a cold weather front enters the area causing incubating water temperatures to drop 3^{o}C or more below 12^{o}C

recruitment to the walleye populations is drastically reduced. A hatchery for walleye in Alberta must be supplied with water at or above 12°C during the egg incubation period to produce viable, swim-up, fish at hatching.

The Lac La Biche and Calgary region were surveyed for small waterbodies suitable for rearing walleye for early summer harvest and planting into Alberta lakes.

Investigations into sources of spawning runs of walleye, large enough to contribute eggs to a proposed hatchery, were initiated in Vandersteen Lake, Long Bay (Cold Lake), Moose Lake, Eagle Lake and the Beaver River. Young-of-the-year walleye traps were constructed and tested for use in 1982 to recapture stocked walleye from borrow pits and potholes. A commercial seine suitable for recapturing stocked walleye from borrow pits was constructed.

Eggs from wild, spring spawning trout were collected from the Bow River stock and were incubated and hatched at the Sam Livingston Fish Hatchery in Calgary. A second introduction of fingerling rainbow trout was made in Smith Dorrien Creek in an attempt to establish a spawning population of rainbow trout in Lower Kananaskis Lake. Water temperature data collected from tributary streams of Lower Kananaskis Lake during the spring and summer months revealed that temperatures during this period of time in these tributary streams were critically low and would negatively affect the success of this program.

Nine Fisheries Research reports were completed and published during the 1980/81 fiscal year.

FISH CULTURE

The Division imported approximately 3 million rainbow trout eggs for its fish culture operations in 1981. Delivery delays were again observed but of a

smaller magnitude than in recent past years (four to eight weeks). Unfortunately several egg lots received were of substantially reduced quality in terms of egg viability, and losses to hatching were high. Egg production from the Raven Brood Trout Station resulted in 1,190,500 eyed rainbow trout eggs and a further 210,500 eyed brook trout eggs in the 1980-81 season. During 1981 some 4,027,900 fish were planted consisting of 3.6 million rainbow trout, over 238,000 lake trout, 58,700 cutthroat trout, 126,000 brook trout and 4,560 brown trout. Although actual planting numbers are down somewhat from 1980, the weight of trout produced remained very similar at 121,500 pounds (55,063 kg). Culling of non-productive brood fish at Raven resulted in an additional 12,200 pounds (5,535 kg) of fish being released into heavily used put and take ponds. These fish averaged 2.75 pounds each.

As noted above Raven Brood Trout Station contributed substantially more eggs than in the previous year contributing better than 25 per cent of the total rainbow eggs and over 200,000 brook trout eggs. This Raven egg take provided a very beneficial effect also in the delivery of the bulk of its egg early (September) in the season allowing development of larger fingerlings by planting time. Difficulties in egg taking were still not eliminated in the 1980-81 season but expanded available crew assured more regular checks of stock and enabled better access to available eggs. Additional steps will be taken to improve production at Raven.

The supply of brown trout from eggs collected and reared from Bow River stock are developing well in the Sam Livingston Fish Hatchery for stocking the Allison Creek Brood Station. A small surplus of approximately 4,500 brown trout fingerlings was stocked out. A second collection of Bow River brown trout was collected in the fall of 1981 to provide back-up brood fish for Allison Station.

Brook trout supplies became available this year from brood stock at Raven with 125,000 fingerlings planted and additional brood stock recruits retained for

Allison Station. The 1981 brook trout egg collection would appear to assure significant brook trout for planting in 1982 as well.

Cutthroat trout eggs were collected from Job Lake. Approximately 59,000 were available for planting. Rawson Lake was reviewed as a second potential cutthroat brood lake and although spawning does not occur until the end of June the lake may offer an alternative site to collect spawn.

A quite successful lake trout egg take was conducted in Cornwall Lake in the fall of 1981 hence similar numbers to 1980 are expected to be available for 1982 plantings.

Construction of Allison Brood Station continued through 1981 and is presently near completion with an anticipated occupancy of April 1, 1982. Two staff members have been hired and have been gaining experience at Raven Brood Station over winter. Brood fish recruits (brook, brown and rainbow trout) have been held at Sam Livingston Fish Hatchery for one to approximately two years. Production is not expected to reach capacity for three to four years.

Consultants have been employed in 1981 to explore sites for a new hatchery for trout and walleye in northern Alberta. A report is expected in early 1982.

Private aquaculture operations appear to have fared quite successfully during a long growing season in 1981. There was an abundance of fingerlings available to game fish farmers and many people appeared to avail themselves of the opportunity. Game Fish Farm licence sales reached a maximum of about 1,700; about 100 higher than at any previous time and about 200 above average.

SUMMARY OF ACTIVITIES OF THE ENFORCEMENT, LIAISON AND STANDARDS BRANCH 1981

ENFORCEMENT SECTION

Fish and Wildlife Enforcement Officers throughout the province continued to provide a variety of field services to the public. The Officers' primary activities included the enforcement of resource related legislation, response to citizen complaints, problem wildlife control work, conducting investigations and public education.

New district offices were opened at Spirit River, Fox Creek and Lloydminster enabling greater extension of public services. With staff realignment, an office was also opened at Drayton Valley. In conjunction with this, four new officer positions were obtained in the approved budget.

The Enforcement Section continued its participation in the Boat Safety Check Program during 1981. The Program, which involves the participation of eight different agencies is designed to educate recreational boat users on boating safety to minimize watercraft related drownings, ensure adequate and proper equipment and to promote safe boating practices. This year, the administration of the program was greatly enhanced with the implementation of a computerized information system documenting all vessel contacts. Of approximately 4000 vessels checked by Fish and Wildlife Officers, about 70% were found to be compliant with regulations. The Division anticipates a greater involvement in the program during the 1982 season.

Enforcement related research continued during 1981, primarily focusing upon the analysis of district workload to provide staffing criteria for effective manpower planning and deployment. To facilitate this, work was initiated in the development of an automated information system designed to provide detailed documentation of officer response to public complaints of illegal

resource use activity, problem wildlife and environmental damage. The system will assist in more effectively monitoring public demand on officer time and in providing information for management decisions on manpower placement.

Tables I through VIII summarize Fish and Wildlife enforcement data for prosecutions concluded between April 1, 1981 and December 31, 1981. Overall, 2045 cases have been processed in the system which represents approximately half of the total anticipated caseload for the 1981/82 fiscal year. Compared to this time during 1980, this volume represents a 12% increase in total caseload.

Typically, the figures given indicate that a relatively high proportion of cases are fisheries as opposed to wildlife infractions. Since a significant number of cases resulting from the 1981 hunting season are, at this time still within the judicial system, these are not yet documented.

Table I which summarizes the types of prosecutions handled to 1981 calendar year end, illustrates the predominance of fisheries infractions resulting from enforcement activities conducted over the spring and summer months of 1981. The volume of wildlife prosecutions will increase substantially as more cases are concluded by the courts in the upcoming months. The breakdown of other related offences is generally consistent with the previous year's activity.

Table II summarizes the types of prosecutions handled by Act and Table III further details the breakdown of convictions under the Wildlife Act. In both cases, trends shown are consistent with the 1980 caseload for the same time period. It is interesting to note that the average overall fine for Wildlife Act convictions, $92.15 was almost identical to the same average fine reported in the 1980 summary ($91.62).

Table IV indicates that for the predominance of the existing caseload (93.3%), individuals admitted guilt as charged either by court appearance or voluntary

payment. There was an 11% increase in voluntary payment penalties over the previous year, which would indicate a decrease in demand on the Court System for Wildlife related offenses.

Table V illustrates the breakdown of convictions which resulted in licence suspension. As indicated in the table, those suspensions relating to big game and bird game are also subject to the mandatory hunter test requirement. Thus far in 1981, 151 hunters have been notified of their mandatory test requirement. Table VI provides the age breakdown of hunters required to take the test. The largest single age group overall, is the 20 - 24 year olds, slightly younger than the actual average ages reported in Table V.

Tables VII and VIII breakdowns on the ages and occupations for convicted offenders. As was the case in the previous years, the single most predominant age category for each type of infraction was the 20 - 24 year group (over one-quarter of all convictions). Additionally, the most common occupational classifications among each conviction type were the labor and trades groups, comprising about one-third of all convicted offenders overall. This is also consistent with the previous year.

PROBLEM WILDLIFE SECTION

The Problem Wildlife Field Services Section was limited to inflationary budget growth from 1980-81, although, there was an additional assistance in the form of a $100,000 purchase of elk feed stack fencing materials.

The beaver flood control program is nearly completed for the year. Of forty participating municipalities, three retain their trappers on a year round basis and they do some winter trapping in problem areas. This 60-40 financed program only needs the inclusion of the County of Lac St. Anne to include all the main beaver problem areas in the province. Complaints have decreased by

6.5% but beaver trapped are down 23% indicating there is a decline in populations in problem areas.

The creek bank brushing and channel clearing project is continuing on the Parlby Creek in the Ponoka district. Inmates within the Alberta Correctional system supply the labour.

Although Grizzly Bear complaints decreased by five from the previous year, there still remains a serious problem. A limited spring hunting season in problem areas may offset increasing complaints. Black bear complaints were down 100%, though forest fires once again drove wildlife out of large areas in the north and north-east areas of the province. The dislocated black bear did not cause the same problems in the fire fighting lines as occurred in the previous year.

Depredation of livestock from wolves increased in the Cochrane, Edson and Athabasca areas but complaints showed an overall 16.6% decline. Control activities are being carried out in the problem areas during the winter months. Due to a mild early winter, ungulates did not become a problem until January. Extensions on anterless hunting seasons had some success on problems in the open areas.

The feed stack fencing program has been stepped up this year with over $160,000 being spent on materials to fence stacks, mostly in elk areas. The maximum issue of wire to producers was doubled from three to six rolls. Most fences built are of a permanent type of construction and should alleviate problems in future years.

FORENSIC SCIENCE SECTION

Forensic services continued to be made available to Fish and Wildlife Officers as well as other agencies. Sixty-six submissions for forensic examination

were handled: Alberta Fish and Wildlife - 36, other Fish and Wildlife Departments - 14, other Alberta Government Departments - 5, Federal Government - 9, City of Edmonton - 1, private citizen - 1.

This volume represents a 25% increase over the previous year and reflects an increased number of samples submitted by our own officers as well as other agencies. Most of the analyses involved species identification of various tissues. A few cases involved determination of age, sex, season of kill, or matching pieces of an animal. Research work being done included determinations of time of death, sex, and length of time tissues have been in storage.

TABLE I

TYPES OF PROSECUTIONS

TYPE	FREQUENCY	PERCENT
WILDLIFE		
Big Game	83	4.1
Upland Bird	76	3.7
Migratory Bird	49	2.4
Misc. Wildlife	284	13.9
(Total Wildlife)	(492)	(24.1)
FISHERIES	787	38.5
OTHER		
Liquor	379	18.5
Small Vessels	151	7.4
Off Highway/Motor Veh./ Highway Traffic	137	6.7
Provincial Parks	32	1.6
Criminal Code	28	1.4
Litter	27	1.3
Miscellaneous	12	0.5
(Total Other)	(766)	(37.4)
TOTAL	2045	100.0

TABLE II

PROSECUTION BREAKDOWN BY ACT

ACT	FREQUENCY	PERCENT
Alberta Fishing Regulations	784	38.3
Wildlife Act	381	18.6
Liquor Control Act	379	18.5
Small Vessel Regulations	151	7.4
Off Highway Vehicle	107	5.2
Game Hunting Regulations	61	3.0
Migratory Birds Conv. Act/Regs.	49	2.4
Other	133	6.5
TOTAL	2045	99.9

TABLE III

COMMON CONVICTIONS UNDER THE WILDLIFE ACT

SECTION		FREQUENCY	PERCENT	AVERAGE FINE ($)
25 (1)	Loaded Firearm	97	26.9	75.26
14	No Licence	54	15.0	92.69
41	Fail to Carry Licence/Tags	43	11.9	14.63
15	Unauthorized Hunting	40	11.1	121.41
16	Illegal Possession	38	10.5	249.14
20	Trespass	24	6.6	62.83
	Other	65	18.0	109.85
TOTAL		361	100.0	92.15*

* Total fines for all 361 convictions under the Wildlife Act equal $33,265.00

TABLE IV

PLEAS ENTERED FOR CHARGES

PLEA	FREQUENCY	PERCENT
Guilty	1189	58.1
Voluntary Ticket	780	38.2
Not Guilty	76	3.7
TOTAL	2045	100.0

TABLE V

CONVICTIONS RESULTING IN LICENSE SUSPENSION

TYPE OF SUSPENSION	FREQUENCY	AVERAGE FINE ($)	AVERAGE AGE (Yrs.)
Big Game*	80	191.86	31.0
Bird Game*	71	61.27	32.6
Fur/Other	19	117.22	29.7
Migratory Bird	42	46.79	35.4
TOTAL	212	112.68	32.3

* Mandatory Hunter Test Requirement applies.

TABLE VI

AGE BREAKDOWN OF OFFENDERS
REQUIRED TO TAKE HUNTER TEST

AGE (Yrs.)	BIG GAME Freq.	BIG GAME Pct.	BIRD GAME Freq.	BIRD GAME Pct.	TOTAL Freq.	TOTAL Pct.
Under 20	3	3.7	6	8.4	9	6.0
20 - 24	20	25.0	19	26.8	39	25.8
25 - 29	21	26.2	9	12.7	30	19.9
30 - 34	11	13.8	9	12.7	20	13.2
35 - 39	10	12.5	9	12.7	19	12.6
40 - 44	7	8.8	7	9.8	14	9.3
45 and over	8	10.0	12	16.9	20	13.2
TOTAL	80	100.0	71	100.0	151	100.0

TABLE VII

AGE BREAKDOWN FOR ALL CONVICTIONS

AGE	WILDLIFE Freq.	WILDLIFE Pct.	FISHERIES Freq.	FISHERIES Pct.	OTHER Freq.	OTHER Pct.	TOTAL Freq.	TOTAL Pct.
under 15	0	0	0	0	0	0	0	0
16 - 19	42	8.6	71	9.3	98	13.1	211	10.5
20 - 24	103	21.1	214	27.9	218	29.2	535	26.7
25 - 29	100	20.5	145	18.9	162	21.7	407	20.3
30 - 34	72	14.7	98	12.8	86	11.5	256	12.8
35 - 39	66	13.5	67	8.8	57	7.6	190	9.5
40 - 44	35	7.2	40	5.2	45	5.1	120	6.0
45 - 49	20	4.1	35	4.6	36	4.8	91	4.6
50 - 54	20	4.1	31	4.0	19	2.5	70	3.5
55 - 59	14	2.9	27	3.5	18	2.4	59	3.0
60 +	16	3.3	38	5.0	8	1.1	62	3.1
TOTAL	488	100.0	766	100.0	747	100.0	2001	100.0

TABLE VIII

OCCUPATIONAL BREAKDOWN FOR ALL CONVICTIONS

OCCUPATION	WILDLIFE		FISHERIES		OTHER		TOTAL	
	Freq.	Pct.	Freq.	Pct.	Freq.	Pct.	Freq.	Pct.
Professional	19	4.1	23	3.0	19	2.5	61	3.1
Managerial	30	6.4	23	3.0	37	5.0	90	4.5
Contracting	3	0.6	1	0.1	6	0.8	10	0.5
Farming	32	6.8	23	3.0	28	3.7	83	4.2
Trades	65	13.9	150	19.6	154	20.6	369	18.6
Transportation	24	5.1	25	3.3	31	4.1	80	4.0
Service	64	13.6	83	10.8	72	9.6	219	11.0
Sales	19	4.1	29	3.8	35	4.7	83	4.2
Operative	35	7.5	43	5.6	66	8.8	144	7.3
Armed Forces	7	1.5	3	0.4	1	0.1	11	0.6
Clerical	2	0.4	22	2.9	8	1.1	32	1.6
Labor	70	14.9	124	16.2	106	14.2	300	15.1
Homemaker	2	0.4	24	3.1	1	0.1	27	1.4
Student	34	7.2	50	6.5	65	8.7	149	7.5
Retired	6	1.3	19	2.5	3	0.4	28	1.4
Unemployed	13	2.8	45	5.9	37	5.0	95	4.8
Miscellaneous	26	5.5	62	8.1	46	6.2	134	6.8
Unknown	18	3.8	17	2.2	32	4.3	67	3.4
TOTAL	469	99.9	766	100.0	747	99.9	1982*	100.0

* missing cases = 19

SUMMARY OF ACTIVITIES OF THE HABITAT PROTECTION AND MANAGEMENT BRANCH 1981

HABITAT PLANNING AND PROTECTION

This Section's planning efforts for internal resource planning progressed in June by hiring a previous Division employee, P. Paetkau. His first task was to coordinate the writing of a goal-setting provincial plan. This plan summarizes the present supply and demand of both habitat and animals for each species, and will project the supply, demand, potential, and goals for each species to the year 2000. This plan is now nearly complete for internal review.

External planning with other agencies is becoming more time consuming. The Heritage Trust Fund Grazing Reserve Program has completed the Blackfoot Implementation Plan which has now been sent out to the public (including Alberta Fish and Game Association) for review and comments. The first phase of the Sang Lake Provincial Grazing Reserve has been completed and field marking of clearings is now proceeding.

Habitat protection has been mostly involved with finalizing referral systems for the new regional set-up. Coordination of these systems is the major role. Some progress was made towards obtaining habitat compensation (mitigation) on Regulated Surface Operations. Instream Flow Requirements for the South Saskatchewan River Basin Study have been developed as well as for the Beaver River/Cold Lake Study. With the recent increase in construction of domestic and municipal dams and weirs, the section is involved in the design of fishways for both warm and cold water species by reviewing many new and innovative concepts.

Some of the major habitat issues addressed primarily by Regional Habitat staff during 1981 were:

Integrated management plans

Water basin plans

Timber development area near Rocky Mountain House

Mitigative efforts with petroleum and natural gas, including a successful intervention at an E.R.C.B. hearing.

Odyssey development

Dickson Dam

Buffalo/Spotted Lake and Parlby Creek

Special Areas land sales

Range Improvement programs

Caribou protection with forestry and P. & N.G. activities

Lesser Slave Lake/Buffalo Bay

WILDLIFE HABITAT INVENTORY

Two habitat mapping pilot projects were initiated in 1981; one in the Buffalo Lake area and the other just west of Rocky Mountain House. These projects are designed to evaluate methodologies which are workable in achieving both current and potential wildlife habitat values within a biophysical landscape classification framework. Air photo interpretation and satellite imagery analysis are being used in conjunction with existing forest cover and land classification inventory data to provide suitable base maps for delineating and evaluating wildlife habitats. Results from the pilot projects, expected by early-to mid-1982, will lay the basic framework for pursuing a provincial reconnaissance habitat inventory program at a map scale of 1:100,000.

Wildlife Key Area Maps for the entire province are currently being updated and redrafted for increased clarity and usability at map scales of 1:250,000 and 1:50,000. These maps are used for Division, Governmental and industry planning and habitat protection programs.

A review of habitat values of wildlife reservations on Crown lands in the Rochester area has been completed and a final report prepared.

An evaluation of abandoned farmsteads in settled Alberta determined farmstead distribution, abundance, habitat value and wildlife use. Data is presently being analyzed and a report will be prepared by mid-1982.

WILDLIFE HABITAT DEVELOPMENT

During 1981-82 approximately $385,000 was allocated to 19 Buck for Wildlife projects. Development activities are summarized in the attached table.

In 1981, three new projects were initiated (Blue Bird Trails, Rolling Hills and Therien Lake). Funds were allocated to the Mountain Blue Bird Trail Conservation Group of Lethbridge to construct, install and maintain 160 nest boxes. Conceptual plans were formalized to develop habitat on the Rolling Hills property. Although $24,000.00 was initially budgeted for this project no funds have been spent this year since design plans are yet to be finalized. The Therien Lake project was initiated to stabilize the island of a small Double-crested Cormorant colony. Minor repairs to the island will focus on hauling and spreading gravel.

The Tyrrell-Rush Lake project was put on hold again this year pending further negotiations between affected landowners and Alberta Environment. The final draft for the Buffalo Lake Habitat Management Area Plan is near completion. Final copies should be available later this year. The Beaverhill Lake Integrated Land Use Plan was completed and approved by the Minister (copies are available on request). A major planning effort was initiated on the Shiningbank Moose Winter Range Project. It is anticipated that active development work (range improvement via clearing) will continue in 1983. Because of the extreme fire conditions experienced over the past two years, the Ram Mountain Burn has been held in abeyance. The $26,000.00 figure for

"Wildlife Projects"

SUMMARY OF 1981-82 BUCK FOR WILDLIFE PROGRAM

Region	Projects	Target Species	1981-82 Budget	DEVELOPMENT ACTIVITIES
Southern	Lake Newell Millicent	Pelicans & Cormorants	$ 75,000.00	Island Stabilization.
		Upland Birds (Pheasants)	5,000.00	Installation of Parking Area to keep vehicles off project.
	Mt. Blue Bird Trails	Bluebirds	800.00	Construction and Installation of nest boxes.
	Rolling Hills	Multiple	(24,000.00)	Project in Planning.
	Tyrrell-Rush Lakes	Waterfowl	(34,000.00)	Project in Planning.
Central	Buffalo Lake	Multiple	3,500.00	Completion of Habitat Management Plan
	Namaka Lake	Waterfowl	13,000.00	Installation and operation of a bait station.
	Habitat Retention on Private Land	Multiple	26,000.00	Habitat Protection and Improvement
	Slack Slough	Multiple	15,000.00	Installation and operation of a bait station.
Northeast	Beaverhill Lake	Mulitple	5,000.00	Range Improvement
	Lychak	Mulitple	9,000.00	Range Improvement
	Therien Lake	Cormorants	1,200.00	Island Stabilization.
Eastern Slopes	Athabasca Ranch	Elk	12,700.00	Range Improvement
	Chip Lake	Multiple	15,000.00	Range Improvement
	Ram Mt. Burn	Bighorns	2,000.00	Range Improvement
Provincial	Cliff Nesting	Raptors & Geese	2,400.00	Nest site excavations.
	Goose Bale Program	Canada Geese	6,000.00	Installation of Nesting bales.
	Shelterbelt Maintenance	Multiple	1,200.00	Maintain Tree Plantings.
	Project Evaluation	Multiple	6,000.00	Evaluate project progress.
	General Services		128,360.00	Administration of Program (Wages, Rentals, etc.)
			$385,160.00	

the Habitat Retention on Private Land program reflects tax incentive payments to landowners for protecting habitat. The completion report, with a review of alternatives for expansion of this pilot program, will allow for expansion to be considered for 1982.

There are many new project proposals requiring extensive planning. Some of these include:

Rochester Reservation Area - Habitat protection and enhancement.
Eastern Slopes - Analysis and plan design for snow-free sites.
Scandia Ranch - Development of a habitat enhancement and management plan.
Walsh Flats - Development of a habitat enhancement and management plan for antelope winter range.
Saddle Hills - Moose winter habitat improvement.
Camp Wainwright - Habitat management plan.
Spotted Lake - Waterfowl habitat development.

FISHERIES HABITAT DEVELOPMENT

During the 1980/82 fiscal year, approximately $500,000 was spent under the Buck for Wildlife Program for the enhancement and maintenance of fisheries habitat. A total of 26 projects were funded and a number of potential projects were investigated (see attached summary).

For the 1981/82 fiscal year $835,900 has been allocated to 19 projects, however, it is expected that only approximately $588,560 will be spent by year-end. Unforeseen obstacles and delays primarily related to inter agency support have resulted in rescheduling of some projects for 1982/83.

In 1982/83 more Buck for Wildlife monies will be spent on expanding the Streambank Protection Program in the Eastern Slopes and Central Regions. Considerable monies are expected to be spent on reclamation of abandoned

reservoirs which once supported good fisheries. A number of existing reservoirs and lakes have also been identified as requiring maintenance and/or enhancement.

More detailed project information is available from the Regional Habitat Biologists or the Fisheries Habitat Development Unit (Edmonton - 427-9506).

FISHERIES HABITAT INVENTORY

Delays in finding an individual to fill the unit supervisor's position held back the unit's performance in 1981. Most of the year's effort was expended on developing the program's framework and initial budget needs in anticipation of a major program expansion in 1983/84. Work in 1982 will focus on both a pilot fisheries habitat program and the preparation of a document that outlines the objectives and immediate goals of the program, the intial development of an effective data storage and retrieval system, a comprehensive search and cataloguing of previously collected habitat data and in the initial preparation of a habitat data collector and user's manual. The transcription of all Divisional fish resource information onto 1:50,000 mylars will be accelerated towards a completion goal in 1982.

FISHERIES BUCK FOR WILDLIFE PROJECTS

1981/82

Project	Region	Budgeted Expenditure	Type of Project
Enchant Pond	S	145,000	Reservoir Improvement
McQuillan Reservoir	S	3,600	Reservoir Improvement
Outpost Lake	S	122,000	Lake Stabilization
Tyrrell Lake	S	207,000	Lake Stabilization
Anderson's Dam	C	15,000	Reservoir Maintenance
Coronation Pond	C	3,500	Reservoir Maintenance
Hansen's Reservoir	C	30,000	Reservoir Improvement
Hartell Reservoir	C	10,000	Reservoir Improvement
Kerbes Pond	C	6,500	Lakeshore Protection and Reservoir Maintenance
Mirror Reservoir	C	10,000	Lakeshore Protection and Reservoir Maintenance
Bathing Lake	ES	30,000	Lake Stabilization
Crooked Creek	ES	6,100	Stream Protection
Pedley Reservoir	ES	5,000	Reservoir Maintenance
Prairie Creek	ES	10,000	Stream Protection
Raven River	ES	31,200	Stream Protection
North Raven River	ES	3,500	Stream Protection
Boyle Pond	NE	70,000	Reservoir Development
Mann Lakes	NE	81,000	Lake Stabilization
Chrystina Lake	PR	46,000	Lake Stabilization
TOTAL		835,900	

FISHERIES BUCK FOR WILDLIFE PROJECTS
1980/81

Project	Region	Monies Spent	Type of Project
Carson Lake Spawning Channel	ES	$ 4,901	Stream Enhancement
Little Beaverdam Lake	S	219	Reservoir Improvement
McQuillan Reservoir	S	1,179	Lake Stabilization
Coronation Pond	C	2,064	Reservoir Improvement
North Raven River	ES/C	22,994	Stream Protection
Red Deer Habitat Retention	ES/C	48,823	Stream Protection
Prairie Creek	ES	2,890	Stream Protection
Stonehill Lake	S	10,620	Reservoir Maintenance
Bathing Lake	ES	34	Lake Stabilization
Boyle Pond	NE	256,764	Reservoir Development
Medicine Hat College Pond	S	300	Reservoir Maintenance
Morinville Pond	NE	131	Reservoir Maintenance
Heart River	PR	111	Stream Protection
Silver Creek	C	1,521	Stream Enhancement
Taber Fish Pond	S	3,000	Reservoir Improvement
Heninger's Reservoir	S	1,929	Reservoir Maintenance
Bow River Habitat Evaluation	C	82,077	Stream Evaluation & Protectio
Broadmoor Pond	NE	20,508	Reservoir Improvement
Three Creeks Reservoir	PR	6,543	Reservoir Development
Figure Eight Lake	PR	911	Lakeshore Protection
Raven River	ES/C	802	Stream Protection
Policeman Creek	ES	4,334	Stream Enhancement
Magrath Pond	S	6,943	Reservoir Improvement
Pedley Reservoir	ES	11,082	Reservoir Maintenance
Kerbes Pond	C	3,904	Reservoir Improvement
Sulphur Lake	PR	726	Lake Stabilization
Nemeila Reservoir	C	407	Reservoir Improvement
McVinnie Reservoir	S	112	Lake Stabilization
Miscellaneous Expenditures		5,219	
		$501,048	